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REMARKS

1. Claims 24-28, 31-37, and 39 are pending in the present application. Claims 1-23, 29, 30, and 38 are cancelled. Claims 24-28, 31-37, and 39 have been rejected by the Examiner. Through this amendment, claims 24, 25, 27, 31, and 36 have been amended; claims 1-23, 29, 30, and 38 are cancelled; and claims 40-42 are new. The amended claims and amended abstract, together with these remarks, respond to the Office Action dated November 16, 2005. After entry of this amendment, claims 24-28, 31-37, and 39-42 will remain. The amended claims are fully supported by the specification and claims as originally filed, do not include new matter, and are in more readable form. Reconsideration of the present application is requested.

2. Claims 24-28, 31-37, and 39 are rejected under the doctrine of obvious-type double patenting over claims 1-19 of US 6,672,860 (Bachinski, et al.). If claims are allowed, Applicants will timely submit a suitable terminal disclaimer.

3. Claims 24, 25, 27, 31-34, and 36 have been rejected by the Examiner under 35 U.S.C. 103(a) as unpatentable over McCarthy, et al. (IE 80484B3) in view of Ellis (3,851,242), Philipp (6,466,036), or Denen (6,838,887). The Examiner cites McCarthy as teaching a proximity warning device for a fireplace but silent as to the use of a capacitance module and cites Ellis, Philipp, and Denen as teaching the measurement of capacitance in a proximity detector.

Even if McCarthy is combined with Ellis, Philipp, or Denen, they still do not recite or suggest all of the elements of the Applicants' amended claims. The Examiner states that "Ellis, Philipp, and Denen all teach measuring capacitance in a proximity detector" In contrast, Applicants claim a proximity warning system comprising an output element whose output is a function of an amount of a difference between a signal produced by a sensor and a signal from an adjustable reference element pre-adjusted to represent the absence of the object, which is clearly not disclosed, suggested, or claimed by McCarthy in view of Ellis, Philipp, or Denen, and is clearly not obvious from McCarthy in view of Ellis, Philipp, or Denen.

Ellis' proximity detection is based on frequency shift (col.3, lines 47-50; col. 8, lines 45-56) in a resonant LC circuit, where the sensor is a coil, not a capacitor (col.4, lines 29-36; 56-65;

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claims 1, 3). The only purpose of Ellis' capacitor is to form a resonant LC circuit (col.4, lines 26-55); it does no sensing. Ellis does not use, disclose, claim or suggest an output element whose output is a function of an amount of a difference between a signal produced by the sensor and a signal from an adjustable reference element pre-adjusted to represent the absence of the object.

Philipp uses at least 3 switching elements, sampling and sensing capacitors or sensing plates, and two voltages in a complicated switching scheme to charge, transfer charge, discharge the capacitors (col. 4 line 7 – col. 5, line 58; col.6, lines 25-32; col. 7, lines 45-49; claims 1, 9, 13, 19). Philipp does not use, disclose, claim or suggest an output element whose output is a function of an amount of a difference between a signal produced by the sensor and a signal from an adjustable reference element pre-adjusted to represent the absence of the object.

Denen uses an asymmetric oscillator circuit to charge a reference and a sensing capacitor (antenna) and uses the difference in voltage waveforms across these two capacitors due to proximity-induced capacitance change in the sensing capacitor to drive a flip-flop between states of drive/not-drive a motor to dispense paper towels. The antenna is discharged to the same voltage for every time period. (col.11, lines 1-60; claims 1, 6, 9, 17, 24, 25, 29). The antenna sensor response depends on the dielectric constant of its proximity space (claims 5, 6). Denen does not use, disclose, claim or suggest an output element whose output is a function of an amount of a difference between a signal produced by the sensor and a signal from an adjustable reference element pre-adjusted to represent the absence of the object.

An inventive aspect of Applicants' invention is the use of a difference in opposed-polarity charging currents ("Net Current") between a tuned, reference capacitor and a sensing capacitive plate that creates an IR voltage outputted from an operational amplifier, after the opposed currents have been balanced to net zero by tuning the reference capacitor to match the capacitance of the sensing plate when no object of concern is in a predetermined zone. The values of sensing or reference capacitances or sensing or reference voltages are not measured, nor does the sensing capacitive plate or reference capacitor have to be discharged or reset every time period. All the monitor module elements claimed by Applicants are not claimed or even suggested by McCarthy, Ellis, Philipp, or Denen.

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4. Claims 26, 28, 35, 37, and 39 have been rejected by the Examiner under 35 U.S.C. 103(a) as unpatentable over McCarthy (IE 80484B3) in view of Ellis (3,851,242), Philipp (6,466,036), or Denen (6,838,887), where Applicants' combination, though not disclosed by Ellis, Philipp, or Denen, is deemed obvious to one skilled in the art.

As discussed above, even if McCarthy is combined with Ellis, Philipp, or Denen, they still do not recite or suggest all of the elements of the Applicants' amended claims, in particular, an output element whose output is a function of an amount of a difference between a signal produced by the sensor and a signal from an adjustable reference element pre-adjusted to represent the absence of the object. Because Applicants' amended claims are allowable, combinations of the allowable claimed subject matter is allowable, and therefore this rejection is traversed.

5. Because McCarthy, Ellis, Philipp, and Denen, neither singly nor in combination, teach or suggest all of the elements of the present claims as amended, the rejection of claims 24-28, 31-37, and 39 under 35 U.S.C. 103(a) is traversed. Since claims 40-42 depend from claim 24, which is now allowable as amended, claims 40-42 are also allowable.

Conclusion

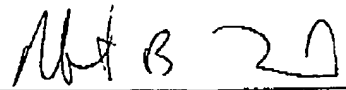
In view of the present amendments and remarks, Applicants submit that the claims are in condition for allowance and request that the Examiner pass this application to issuance.

Respectfully submitted,

THOMAS J. BACHINSKI, et al.

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By:



Robert B. Leonard, #33,946
612/766-8578
Customer No. 58506

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